



**OU1 Design Change and Modification Sheet:
Change/Modification # 34**

This form is used to document changes and modification to the approved plans.

This form will be kept with the official Quality Control Site Plan.

Date Initiated: 6/25/12

Date Executed: 6/25/12

Property ID: _____ Operable Unit 1

Design Change / Modification Description:

Sheet C7, Proposed Bank and Boat Ramp Restoration Plan. Eliminate 8 l.f. of articulated concrete mat (ArmorFlex Mat). The concrete poured at the bottom of the ramp to correct the approach angle necessitates the elimination of the mat section. The additional lineal footage added to the ramp creates a high spot at the top of ramp when tying into the existing grade.
Reference attached drawing.

Changes marked on Quality Control Plans? Yes ☒ No ☐

Signatures:

Approved:

USACE or EPA: [Signature]

Date: 06/25/12

City of Libby: Jim Hammon

Date: 6/25/2012

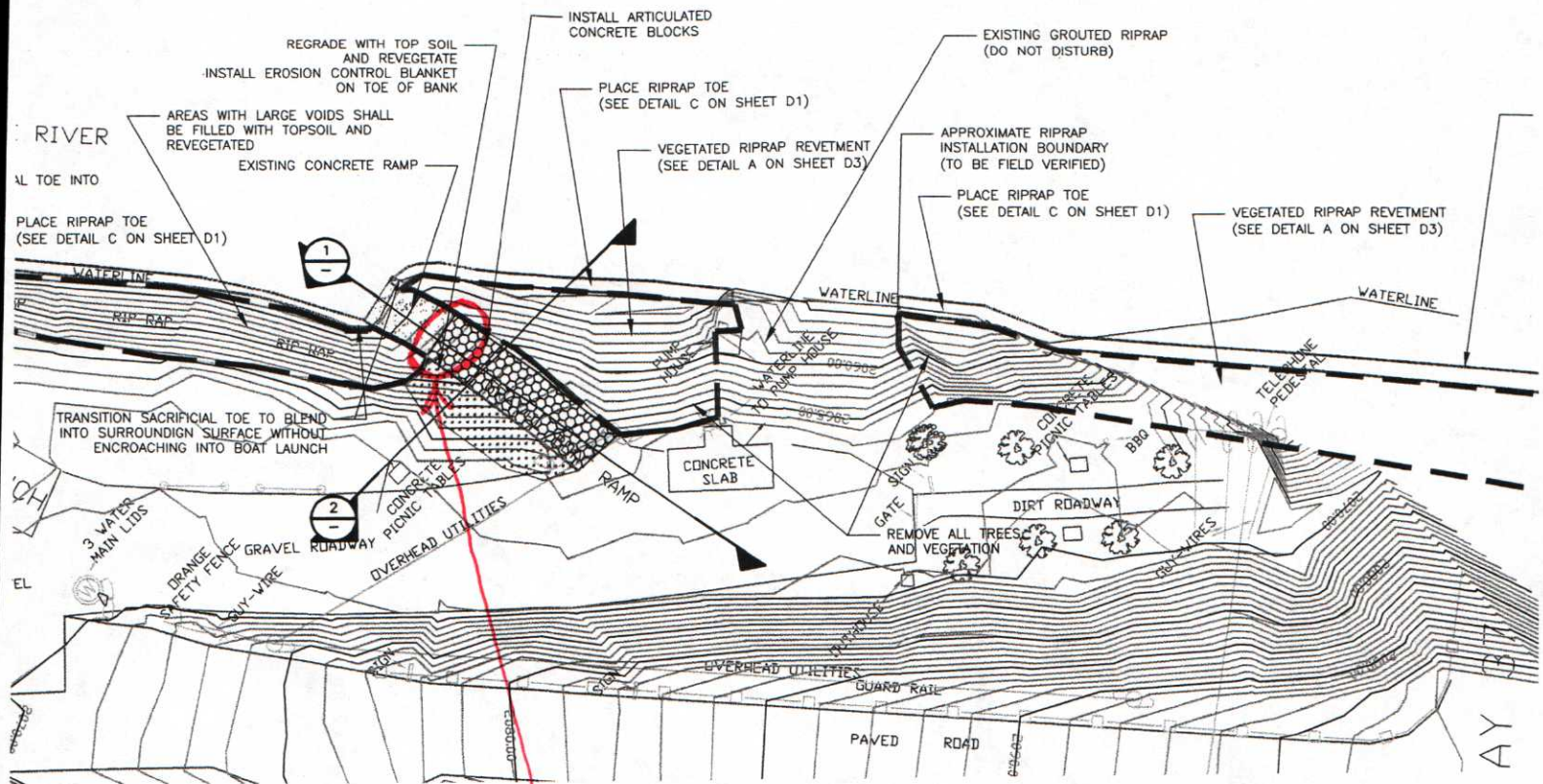
Acknowledged:

CQC: [Signature]

Date: 6/25/12

TQA: [Signature]

Date: 6/25/12



INSTALLATION AND AREAS WHERE LARGE VOIDS
BOUNDARY TO BE FIELD VERIFIED
PRESENTATIVE).

REPLACEMENT BOUNDARY (TO BE FIELD VERIFIED
PRESENTATIVE).

TO BE BACKFILLED WITH TOP SOIL AND REVEGETATED

CONCRETE BLOCKS

**84% OF ARTICULATED CONCRETE MAT
ELIMINATED, CONCRETED
POURED IN LIEU OF MAT
TO FACILITATE RAMP
ANGLE CORRECTION.**

IS ARMORFLEX MATS)

ROCK) BACKFILL WITH
4000 PSI CONCRETE WITH
2" MIN. THICKNESS OVER
ANCHORED TOE OF
ARTICULATED CONCRETE MAT
(TYP. TOP AND BOTTOM OF RAMP)
WITH 0.45 MAX. WATER-CEMENT RATIO



EXISTING CONCRETE RAMP

3' MIN. CONCRETE ANCHOR
4-#4 REBAR AS SHOWN

CONCRETE BLOCKS (50S ARMORFLEX MATS
3 EQUAL)
WITH 1.5" CRUSHED ROCK)

ABRIC CONTECH C70/D6
LOVED EQUAL
BX1100 OR BX1200 GEOGRID
LOVED EQUAL

FILL BED
SENTATIVE

NOTE:
SEE MANUFACTURER'S DETAILS FOR INSTALLATION PROCEDURES.

INSTALL 2 FEET OF RIPRAP
AT THE TOE OF EMBANKMENT

INSTALL EROSION CONTROL
BLANKET ON TOE OF BANK

WEST EMBANKMENT -
BACKFILL AND COMPACT WITH COMMON FILL
OVERLAIN BY 6 INCHES OF TOPSOIL
TIE INTO EXISTING BANK

VEHICULAR CROSSING
(20 FT WIDE)

EAST
INSTAL
SEEDS

**SHT. C7
PROPOSED BANK AND BOAT
RAMP RESTORATION PLAN**

NOTES:

- INSTALL BOAT RAMP ARTICULATED CONCRETE BLOCKS AS PER MANUFACTURER'S SPECIFICATIONS.
- EXISTING CONCRETE RAMP SHALL NOT BE DISTURBED. ANY DAMAGE TO THE EXISTING CONCRETE RAMP SHALL BE RESTORED TO THE EXISTING CONDITIONS AT NO EXPENSE TO THE GOVERNMENT.
- APPROXIMATE DIMENSION OF THE BOAT RAMP AREA TO BE IMPROVED WITH ARTICULATED CONCRETE BLOCKS IS 60 FT LONG BY 20 FT WIDE NOT INCLUDING ANCHORS.
- THE EAST BANK OF THE BOAT RAMP SHALL BE PROTECTED WITH PLANTED RIPRAP. THE RIPRAP SHALL BE PLACED AROUND THE MATURE SAPLING COTTONWOOD TREES SUCH THAT MINIMAL DAMAGE TO THE TREE OCCURS.
- THE WEST BANK SHALL BE BACKFILLED AND COMPACTED WITH COMMON FILL OVERLAIN WITH 6 INCHES OF TOPSOIL BEFORE REVEGETATING. AN EROSION CONTROL BLANKET SHALL BE INSTALLED ON THE TOE OF THE BANK AS PER MANUFACTURER'S SPECIFICATIONS.
- REINFORCING STEEL SHALL BE NEW BILLET STEEL CONFORMING TO ASTM SPECIFICATION A615, GRADE 60. FIELD BEND BARS AS NEEDED AROUND ACI & CRSI APPROVED DEVICES.

JL 6/25/12

Symbol	
REV.1	PROJECT REVIEW COMM
REV.2	ADDITIONAL PROJECT R

CDM Federal Programs Corp

Designed by:	K. MAINZHAUSEN T. JOHNSON	US E Regl Denv
Drawn by:	K. HUFFSMITH	
Checked by:	G. MCKENZIE	
Submitted by:	G. MCKENZIE	
Scale:		
Date:		
Dwg. No.:		